SEQUENCE LISTING

(1) GENERAL INFORMATION:

    (i) APPLICANT: Weiner, Amy J.
                Houghton, Michael

    (ii) TITLE OF INVENTION: Conserved Motif of Hepatitis C Virus
          E2/NS1 Region

    (iii) NUMBER OF SEQUENCES: 134

    (iv) CORRESPONDENCE ADDRESS:
         (A) ADDRESSEE: Chiron Corporation
         (B) STREET: 4560 Horton Street
         (C) CITY: Emeryville
         (D) STATE: CA
         (E) COUNTRY: USA
         (F) ZIP: 94608-2916

    (v) COMPUTER READABLE FORM:
         (A) MEDIUM TYPE: Floppy disk
         (B) COMPUTER: IBM PC compatible
         (C) OPERATING SYSTEM: PC-DOS/MS-DOS
         (D) SOFTWARE: PatentIn Release #1.0, Version #1.25

    (vi) CURRENT APPLICATION DATA:
         (A) APPLICATION NUMBER: US 08/823,980
         (B) FILING DATE: 25-MARCH-1997
         (C) CLASSIFICATION:

    (viii) ATTORNEY/AGENT INFORMATION:
         (A) NAME: Rosen, Mark J.
         (B) REGISTRATION NUMBER: 39,822
         (C) REFERENCE/DOCKET NUMBER: CHIR-0108

    (ix) TELECOMMUNICATION INFORMATION:
         (A) TELEPHONE: 215-564-6525
         (B) TELEFAX: 215-568-3439


(2) INFORMATION FOR SEQ ID NO:1:

    (i) SEQUENCE CHARACTERISTICS:
         (A) LENGTH: 6 amino acids
         (B) TYPE: amino acid
         (C) STRANDEDNESS: single
         (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

(ix) FEATURE:
    (A) NAME/KEY: Xaa
    (B) LOCATION: 1
    (D) OTHER INFORMATION: /label= variable
        /note= "Represents Ala, Arg, Asp, Gly, Lys, Ser,
        or Thr"

(ix) FEATURE:
    (A) NAME/KEY: Xaa
    (B) LOCATION: 2
    (D) OTHER INFORMATION: /label= variable
        /note= "Represents Ile, Leu, Met, Phe or Trp"

(ix) FEATURE:
    (A) NAME/KEY: Xaa
    (B) LOCATION: 3
    (D) OTHER INFORMATION: /label= variable
        /note= "Represents Leu or Phe"

(ix) FEATURE:
    (A) NAME/KEY: Xaa
    (B) LOCATION: 6
    (D) OTHER INFORMATION: /label= variable
        /note= "Represents Ala or Gly"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Xaa Xaa Xaa Xaa Xaa Xaa
1           5

(2) INFORMATION FOR SEQ ID NO:2:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 32 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (ix) FEATURE:
        (A) NAME/KEY: Xaa
        (B) LOCATION: 1
        (D) OTHER INFORMATION: /label= Dpr
            /note= 2,3-diaminopropionic is acetyl cysteine

    (ix) FEATURE:
        (A) NAME/KEY: Xaa
        (B) LOCATION: 2
        (D) OTHER INFORMATION: /label= Ahe

/note= 2-amino heptanoic is butyl alanine

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Xaa Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser
1           5               10              15

Gly Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu
        20              25                  30


(2) INFORMATION FOR SEQ ID NO:3:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 5 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

    Val Ser Leu Leu Ala
    1               5


(2) INFORMATION FOR SEQ ID NO:4:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 7 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

    Ser Leu Leu Ala Pro Gly Ala
    1               5

(2) INFORMATION FOR SEQ ID NO:5:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 5 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Leu Ala Pro Gly Ala
1                   5


(2) INFORMATION FOR SEQ ID NO:6:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 7 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (ix) FEATURE:
        (A) NAME/KEY: Xaa
        (B) LOCATION: 7
        (D) OTHER INFORMATION: /label= variable
            /note= "Represents Ala, Pro or Ser"


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Ser Leu Leu Xaa Xaa Gly Xaa
1                   5


(2) INFORMATION FOR SEQ ID NO:7:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 7 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

(ix) FEATURE:
     (A) NAME/KEY: Xaa
     (B) LOCATION: 7
     (D) OTHER INFORMATION: /label= variable
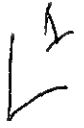         /note= "Represents Ala, Pro or Ser"


(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Ser Leu Phe Xaa Xaa Gly Xaa
1           5


(2) INFORMATION FOR SEQ ID NO:8:

  (i) SEQUENCE CHARACTERISTICS:
     (A) LENGTH: 31 amino acids
     (B) TYPE: amino acid
     (C) STRANDEDNESS: single
     (D) TOPOLOGY: linear

 (ii) MOLECULE TYPE: peptide

 (ix) FEATURE:
     (A) NAME/KEY: Xaa
     (B) LOCATION: 1
     (D) OTHER INFORMATION: /label= variable
         /note= "Represents Ala, Ser, Glu, Gln, Gly, His, Thr,
         Asp, Arg, Lys, Asn, or Val"

 (ix) FEATURE:
     (A) NAME/KEY: Xaa
     (B) LOCATION: 3
     (D) OTHER INFORMATION: /label= variable
         /note= "Represents Tyr, Gln, Arg, His, Thr, Asn, Ile,
         Leu, or Ser"

 (ix) FEATURE:
     (A) NAME/KEY: Xaa
     (B) LOCATION: 8
     (D) OTHER INFORMATION: /label= variable
         /note= "Represents Ala, Gln, Val, Ile, Asn, Thr, Ser,
         Lys, Glu, Arg, or His"

 (ix) FEATURE:
     (A) NAME/KEY: Xaa
     (B) LOCATION: 14
     (D) OTHER INFORMATION: /label= variable
         /note= "Represents Asn, Arg, His, Lys, Ala, Tyr, Ser,
         Phe, Leu, Gln, or Thr"

(ix)  FEATURE:
              (A)  NAME/KEY: Xaa
              (B)  LOCATION: 16
              (D)  OTHER INFORMATION: /label= variable
                    /note= "Represents Phe, Val, Ile, or Leu"

        (ix)  FEATURE:
              (A)  NAME/KEY: Xaa
              (B)  LOCATION: 17
              (D)  OTHER INFORMATION: /label= variable
                    /note= "Represents Val, Ala, Thr, Ser, or Pro"

        (ix)  FEATURE:
              (A)  NAME/KEY: Xaa
              (B)  LOCATION: 21
              (D)  OTHER INFORMATION: /label= variable
                    /note= "Represents Arg, Ser, Gly, Thr, Asn, Met, Ala,
                    Leu, Thr, Gln, Asp, Lys, or Glu"

        (ix)  FEATURE:
              (A)  NAME/KEY: Xaa
              (B)  LOCATION: 22
              (D)  OTHER INFORMATION: /label= variable
                    /note= "Represents Ser, Pro, Leu, Val, His, Arg, Tyr,
                    Gln, Thr, or Ala"

        (ix)  FEATURE:
              (A)  NAME/KEY: Xaa
              (B)  LOCATION: 24
              (D)  OTHER INFORMATION: /label= variable
                    /note= "Represents Ala, Ser, or Pro"

        (ix)  FEATURE:
              (A)  NAME/KEY: Xaa
              (B)  LOCATION: 27
              (D)  OTHER INFORMATION: /label= variable
                    /note= "Asn, Asp, Lys, Arg, Thr, or Glu"

        (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:8:

        Xaa Thr Xaa Val Thr Gly Gly Xaa Ala Ala Arg Thr Thr Xaa Gly Xaa
        1               5                   10                  15

        Xaa Ser Leu Phe Xaa Xaa Gly Xaa Ser Gln Xaa Ile Gln Leu Ile
                    20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:9:

        (i)  SEQUENCE CHARACTERISTICS:
              (A)  LENGTH: 31 amino acids

                              - 49 -

(B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

    Ala Thr Tyr Ala Thr Gly Ala Ala Gln Gly His Ala Thr Asn Ser Phe
    1               5                   10                  15

    Val Ser Leu Phe Arg Ser Gly Ala Ser Gln Asn Leu Lys Leu Val
                20                  25                  30


(2) INFORMATION FOR SEQ ID NO:10:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

    Ser Thr Gln Val Thr Gly Gly Gln Ala Ala His Thr Val Arg Gly Val
    1               5                   10                  15

    Ala Ser Ile Phe Ser Pro Gly Ser Arg Gln Asp Ile Ser Leu Ile
                20                  25                  30


(2) INFORMATION FOR SEQ ID NO:11:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

    Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
    1               5                   10                  15

    Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val
                20                  25                  30

(2) INFORMATION FOR SEQ ID NO:12:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

```
Ser Thr His Val Met Gly Ala Gln Gln Gly Arg Val Ala Lys Gly Phe
1               5                   10                  15

Thr Ser Leu Phe Gly Pro Gly Pro Ala Gln Lys Ile Gly Leu Ile
            20                  25                  30
```


(2) INFORMATION FOR SEQ ID NO:13:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

```
Ser Thr His Val Thr Gly Ala Val Gln Gly His Ser Ile Arg Gly Leu
1               5                   10                  15

Thr Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val
            20                  25                  30
```


(2) INFORMATION FOR SEQ ID NO:14:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

```
Glu Thr His Val Thr Gly Gly Ile Ala Ala Lys Thr Thr Ala Ser Leu
```

```
1                 5                      10                    15
Thr Gly Leu Phe Asn Leu Gly Ala Lys Gln Asn Ile Gln Leu Ile
        20                      25                    30
```

(2) INFORMATION FOR SEQ ID NO:15:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

```
Glu Thr His Val Thr Gly Gly Asn Ala Gly Arg Ala Ala Ala Gly Ile
1                 5                      10                    15

Ala Gly Leu Phe Thr Leu Gly Ala Lys Gln Asn Val Gln Leu Ile
        20                      25                    30
```

(2) INFORMATION FOR SEQ ID NO:16:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

```
Gln Thr Arg Val Thr Gly Gly Thr Ala Ala Gln Ser Thr Ala Arg Ile
1                 5                      10                    15

Ala Gly Leu Phe Ser Leu Gly Ala Arg Gln Asn Ile Gln Leu Ile
        20                      25                    30
```

(2) INFORMATION FOR SEQ ID NO:17:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

```
Gln Thr His Val Met Gly Gly Thr Ala Gly Arg Asn Ala Tyr Gly Leu
1               5               10              15

Thr Ser Phe Leu Ser Val Gly Ala Ser Gln Lys Ile Gln Leu Ile
            20              25              30
```

(2) INFORMATION FOR SEQ ID NO:18:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 31 amino acids
      (B) TYPE: amino acid
      (C) STRANDEDNESS: single
      (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

```
Glu Thr His Val Met Gly Gly Ala Ala Ser Ser Thr Thr Tyr Arg Phe
1               5               10              15

Ala Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val
            20              25              30
```

(2) INFORMATION FOR SEQ ID NO:19:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 31 amino acids
      (B) TYPE: amino acid
      (C) STRANDEDNESS: single
      (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

```
Glu Thr His Val Thr Gly Gly Ser Ala Ala Ser Thr Thr Ala Thr Phe
1               5               10              15

Ser Lys Leu Phe Met Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
            20              25              30
```

(2) INFORMATION FOR SEQ ID NO:20:

   (i) SEQUENCE CHARACTERISTICS:

```
            (A)  LENGTH: 31 amino acids
            (B)  TYPE: amino acid
            (C)  STRANDEDNESS: single
            (D)  TOPOLOGY: linear

      (ii)  MOLECULE TYPE: peptide

      (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:20:

      Gly Thr Thr Arg Val Gly Gly Ala Ala Ala Arg Thr Thr Ser Ser Phe
      1               5                   10                  15

      Ala Ser Leu Leu Thr His Gly Pro Ser Gln Asn Ile Gln Leu Val
                20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:21:

      (i)  SEQUENCE CHARACTERISTICS:
            (A)  LENGTH: 31 amino acids
            (B)  TYPE: amino acid
            (C)  STRANDEDNESS: single
            (D)  TOPOLOGY: linear

      (ii)  MOLECULE TYPE: peptide

      (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:21:

      Gly Thr His Val Thr Gly Gly Ala Ala Ala Arg Asp Ala Phe Arg Phe
      1               5                   10                  15

      Ser Ser Leu Phe Thr Arg Gly Pro Ser Gln Asn Ile Gln Leu Ile
                20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:22:

      (i)  SEQUENCE CHARACTERISTICS:
            (A)  LENGTH: 31 amino acids
            (B)  TYPE: amino acid
            (C)  STRANDEDNESS: single
            (D)  TOPOLOGY: linear

      (ii)  MOLECULE TYPE: peptide

      (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:22:

      Ala Thr Asn Met Thr Gly Gly Ala Pro Ala A⌐
      1               5                   10

      Thr Thr Leu Phe Ser Tyr Gly Ala Ser
                20                  2⌐
```

(2) INFORMATION FOR SEQ ID NO:23:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

```
His Asn His Val Thr Gly Gly Thr Ser Ala Arg Asn Thr Phe Gly Ile
1               5                   10                  15

Thr Thr Leu Phe Thr Gln Gly Pro Ser Gln Lys Leu Gln Leu Val
            20              25                  30
```

(2) INFORMATION FOR SEQ ID NO:24:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

```
Gly Thr His Val Thr Gly Gly Ala Ala Ala Arg Asn Ala His Ser Leu
1               5                   10                  15

Thr Ser Leu Leu Ala Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile
            20              25                  30
```

(2) INFORMATION FOR SEQ ID NO:25:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

```
Thr Thr Arg Val Ser Gly Gly Thr Ala Ala His Thr Thr Ala Gly Leu
```

```
            1                   5                         10                        15
         Thr Ser Leu Phe Ser Pro Gly Pro Arg Gln Asn Ile His Leu Val
                     20                  25                      30
```

(2)  INFORMATION FOR SEQ ID NO:26:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

     (ii) MOLECULE TYPE: peptide

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

```
         Thr Thr His Val Ser Gly Gly Thr Ala Gly Arg Thr Thr Ala Ser Leu
         1               5                   10                  15

         Thr Ser Phe Phe Ala Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
                     20                  25                      30
```

(2)  INFORMATION FOR SEQ ID NO:27:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

     (ii) MOLECULE TYPE: peptide

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

```
         Thr Thr His Val Thr Gly Gly Ala Thr Gly His Thr Thr Ser Gly Ile
         1               5                   10                  15

         Ala Ser Leu Phe Leu Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile
                     20                  25                      30
```

(2)  INFORMATION FOR SEQ ID NO:28:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

```
Asp Thr Tyr Ala Ser Gly Gly Ala Gln Gly Arg Ser Thr Leu Gly Phe
1               5                   10                  15

Thr Ser Leu Phe Thr Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:29:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

```
Asp Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Ala Thr Tyr Gly Ile
1               5                   10                  15

Thr Ser Leu Phe Ala Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:30:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

```
Arg Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Thr Thr His Gly Phe
1               5                   10                  15

Thr Ser Leu Phe Ser Thr Gly Ala Arg Gln Asn Ile Gln Leu Ile
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:31:

    (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids
                    (B) TYPE: amino acid
                    (C) STRANDEDNESS: single
                    (D) TOPOLOGY: linear

          (ii) MOLECULE TYPE: peptide

          (xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

     Gln Thr Tyr Val Thr Gly Gly Lys Ala Ala Gln Thr Val Ser Gly Phe
     1               5                   10                  15

     Thr Gly Leu Phe Ser Ser Gly Pro Ser Gln Lys Ile Gln Leu Ile
                 20              25                  30


(2)  INFORMATION FOR SEQ ID NO:32:

          (i) SEQUENCE CHARACTERISTICS:
                    (A) LENGTH: 31 amino acids
                    (B) TYPE: amino acid
                    (C) STRANDEDNESS: single
                    (D) TOPOLOGY: linear

          (ii) MOLECULE TYPE: peptide

          (xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

     Asp Thr Tyr Val Ser Gly Gly Ala Ala Ala Arg Ser Ile Ser Gly Phe
     1               5                   10                  15

     Thr Ser Leu Phe Thr Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
                 20              25                  30


(2)  INFORMATION FOR SEQ ID NO:33:

          (i) SEQUENCE CHARACTERISTICS:
                    (A) LENGTH: 31 amino acids
                    (B) TYPE: amino acid
                    (C) STRANDEDNESS: single
                    (D) TOPOLOGY: linear

          (ii) MOLECULE TYPE: peptide

          (xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

     Ser Thr Tyr Val Thr Gly Gly Glu Ala Ser Arg Thr Thr Arg Gly Phe
     1               5                   10                  15

     Ala Ser Leu Phe Thr Leu Gly Ser Ser Gln Lys Ile Gln Leu Ile
                 20              25                  30

(2) INFORMATION FOR SEQ ID NO:34:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Asn Thr Tyr Val Thr Gly Gly Ser Ala Gly Arg Ala Val Ala Gly Phe
1               5               10              15

Ala Gly Leu Leu Gln Pro Gly Ala Lys Gln Asn Val Gln Leu Ile
          20              25              30


(2) INFORMATION FOR SEQ ID NO:35:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

His Thr Arg Val Thr Gly Gly Gln Val Ala Phe Arg Thr His Gly Leu
1               5               10              15

Val Ser Leu Phe Thr Gln Gly Pro Ser Gln Lys Ile Gln Leu Val
          20              25              30


(2) INFORMATION FOR SEQ ID NO:36:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

His Thr His Val Thr Gly Gly Arg Val Ala Ser Ser Thr Gln Ser Leu

```
           1                   5                      10                     15

           Val Ser Trp Leu Ser Gln Gly Pro Ser Gln Lys Ile Gln Leu Val
                       20              25                     30
```

(2)  INFORMATION FOR SEQ ID NO:37:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:37:

```
His Thr Arg Val Thr Gly Gly Val Gln Gly His Val Thr Ser Thr Leu
1                   5                      10                     15

Thr Ser Leu Phe Arg Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
            20              25                     30
```

(2)  INFORMATION FOR SEQ ID NO:38:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:38:

```
Asn Thr Arg Val Thr Gly Gly Val Gln Gly Arg Asp Thr Ser Gly Leu
1                   5                      10                     15

Val Ser Leu Phe Ser Leu Gly Pro Ser Gln Lys Ile Gln Leu Val
            20              25                     30
```

(2)  INFORMATION FOR SEQ ID NO:39:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Asp Thr His Val Thr Gly Gly Ala Gln Ala Lys Thr Thr Asn Arg Leu
1               5                   10                  15

Val Ser Met Phe Ala Ser Gly Pro Ser Gln Lys Ile Gln Leu Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:40:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Glu Thr His Val Thr Gly Gly Ala Ser Ala Arg Thr Thr Gln Arg Phe
1               5                   10                  15

Thr Ser Phe Phe Asp Leu Gly Pro Ser Gln Lys Ile Gln Leu Val
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:41:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Thr Thr Tyr Met Thr Gly Gly Ala Asn Ala Arg Thr Thr Gln Gly Phe
1               5                   10                  15

Val Ser Leu Phe Thr Pro Gly Pro Ala Gln Lys Ile Gln Leu Val
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:42:

    (i) SEQUENCE CHARACTERISTICS:

(A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:42:

Glu Thr His Val Thr Gly Gly Thr Ser Ala Arg Thr Thr Gln Gly Phe
1               5                   10                  15

Val Ser Leu Phe Ser Ala Gly Ala Ser Gln Lys Ile Gln Leu Val
            20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:43:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:43:

Gly Thr His Val Thr Gly Gly Gln Ala Ala Arg Thr Thr Gln Ser Phe
1               5                   10                  15

Thr Ser Leu Phe Ser Pro Gly Pro Gln Gln Lys Ile Gln Leu Ile
            20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:44:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:44:

Arg Thr His Val Thr Gly Gly Lys Ala Ala His Thr Thr Lys Gly Phe
1               5                   10                  15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Asn Ile Gln Leu Ile
            20                  25                  30

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(2) INFORMATION FOR SEQ ID NO:45:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

```
Glu Thr Arg Val Thr Gly Ala Val Gln Gly His Gly Ala Leu Gly Leu
1               5                   10                  15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Lys Ile Gln Leu Ile
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:46:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

```
Glu Thr Arg Val Thr Gly Ala Ile Ala Gly Arg Thr Ala Ser Ser Phe
1               5                   10                  15

Ala Gly Leu Phe Thr Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:47:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

```
Glu Thr Arg Val Thr Gly Gln Gln Val Gly Arg Thr Thr Gln Ser Leu
```

```
     1                  5                       10                       15

Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Thr Ile Gln Leu Ile
           20                  25                       30
```

(2) INFORMATION FOR SEQ ID NO:48:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

```
Gln Thr Arg Val Thr Gly Ala Gln Val Gly Arg Thr Thr Ser Ser Leu
1                   5                   10                      15

Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Asn Ile Gln Leu Val
           20                  25                       30
```

(2) INFORMATION FOR SEQ ID NO:49:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

```
Arg Thr Gln Val Thr Gly Ala Gln Ala Gly His Thr Thr Ser Gly Leu
1                   5                   10                      15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Lys Ile Gln Leu Val
           20                  25                       30
```

(2) INFORMATION FOR SEQ ID NO:50:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly Phe
1               5                   10                  15

Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:51:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Thr Gly Ile
1               5                   10                  15

Ala Ser Leu Phe Thr Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:52:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Ser Thr His Val Thr Gly Gly Thr Ala Ala His Thr Val Ala Gly Phe
1               5                   10                  15

Ser Ser Leu Phe Thr Val Gly Pro Lys Gln Asn Ile Gln Leu Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:53:

    (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Glu Thr His Val Thr Gly Gly Ala Ala Ala Tyr Thr Ala Ala Gly Leu
1               5               10              15

Ala Ser Leu Phe Thr Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
            20              25              30


(2) INFORMATION FOR SEQ ID NO:54:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu
1               5               10              15

Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
            20              25              30


(2) INFORMATION FOR SEQ ID NO:55:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Gly Thr His Val Thr Gly Gly Ser Ala Gly Arg Ala Thr Ala Gly Ile
1               5               10              15

Ala Gly Leu Leu Thr Pro Gly Ala Arg Gln Asn Ile Gln Leu Val
            20              25              30

(2)  INFORMATION FOR SEQ ID NO:56:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:56:

Lys Thr His Val Thr Gly Gly Ser Ala Ala Arg Thr Thr Ser Gly Ile
1               5                   10                  15

Ala Ser Leu Leu Thr Pro Gly Ala Lys Gln Asn Val Gln Leu Ile
            20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:57:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:57:

Lys Thr Tyr Val Thr Gly Gly Ser Gln Ala Gln Ala Thr Phe Gly Phe
1               5                   10                  15

Thr Ser Leu Leu Gln Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile
            20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:58:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:58:

Glu Thr Thr Val Thr Gly Gly Ser Ala Ala His Gly Ala Leu Gly Ile

```
           1                    5                      10                      15
       Ala Ser Leu Phe Asn Gln Gly Ala Arg Gln Asn Ile Gln Leu Ile
                   20                  25                      30
```

(2) INFORMATION FOR SEQ ID NO:59:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

```
       Glu Thr Tyr Val Thr Gly Gly Ala Ser Ala Arg Ser Thr Phe Thr Leu
       1                    5                      10                      15

       Val Gly Leu Phe Lys Gln Gly Ser Gln Gln Asn Ile Gln Leu Val
                   20                  25                      30
```

(2) INFORMATION FOR SEQ ID NO:60:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

```
       Gln Thr Tyr Val Ser Gly Gly Ser Ser Gly Arg Thr Thr Ser Gly Leu
       1                    5                      10                      15

       Val Ser Ile Phe Ser Pro Gly Ala Ser Gln Asn Leu Gln Leu Ile
                   20                  25                      30
```

(2) INFORMATION FOR SEQ ID NO:61:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Glu Thr Tyr Val Ser Gly Gly Ala Ala Ala Gln Thr Thr Ala Arg Phe
1                   5                   10                  15

Ala Gly Phe Phe Gln Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:62:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Glu Thr Tyr Val Ser Gly Gly Ser Ala Ala Gln Thr Thr Ala Gly Phe
1                   5                   10                  15

Val Arg Leu Phe Glu Thr Gly Pro Lys Gln Asn Ile Gln Leu Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:63:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Ser Thr Tyr Val Ser Gly Gly Ala Gln Ala Arg Ala Ala Gln Gly Ile
1                   5                   10                  15

Thr Ser Leu Phe Ser Arg Gly Ser Ser Gln Lys Ile Gln Leu Val
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:64:

    (i) SEQUENCE CHARACTERISTICS:

```
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

   Ser Thr Tyr Val Thr Gly Gly Thr Gln Gly Arg Ala Ala Ser Gly Leu
   1               5                  10                  15

   Thr Ser Leu Phe Ser Ala Gly Ala Ser Gln Asn Ile Gln Leu Ile
            20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:65:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

   Asn Thr Tyr Val Ser Gly Gly Thr Ala Gly His Thr Gly His Gly Leu
   1               5                  10                  15

   Thr Ala Leu Phe Ser Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
            20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:66:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

   Ser Thr Ile Val Ser Gly Gly Thr Val Ala Arg Thr Thr His Ser Leu
   1               5                  10                  15

   Ala Ser Leu Phe Thr Gln Gly Ala Ser Gln Lys Ile Gln Leu Ile
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:67:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

    Glu Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Thr Leu
    1               5                   10                  15

    Ala Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
                20              25                  30


(2) INFORMATION FOR SEQ ID NO:68:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

    His Thr Leu Thr Thr Gly Gly His Ala Ala Arg Leu Thr Ser Gly Phe
    1               5                   10                  15

    Ala Gly Leu Phe Thr Pro Gly Pro Ser Gln Arg Ile Gln Leu Ile
                20              25                  30


(2) INFORMATION FOR SEQ ID NO:69:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

    Glu Thr Ile Val Ser Gly Gly Gln Ala Ala Arg Ala Met Ser Gly Leu

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```
            1                    5                        10                       15
            Val Ser Leu Phe Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
                        20                    25                    30
```

(2) INFORMATION FOR SEQ ID NO:70:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

```
Glu Thr Tyr Thr Ser Gly Gly Asn Ala Gly His Thr Met Thr Gly Ile
1                   5                   10                  15

Val Arg Phe Phe Ala Pro Gly Pro Lys Gln Asn Val His Leu Ile
            20                    25                    30
```

(2) INFORMATION FOR SEQ ID NO:71:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

```
Thr Thr Tyr Thr Thr Gly Gly Asn Ala Ala Arg Thr Thr Gln Ala Leu
1                   5                   10                  15

Thr Ser Phe Phe Ser Pro Gly Ala Lys Gln Asp Ile Gln Leu Ile
            20                    25                    30
```

(2) INFORMATION FOR SEQ ID NO:72:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

```
Glu Thr Tyr Thr Thr Gly Gly Ser Thr Ala Arg Thr Thr Gln Gly Leu
1               5                   10                  15

Val Ser Leu Phe Ser Arg Gly Ala Lys Gln Asp Ile Gln Leu Ile
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:73:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

```
Ala Thr Tyr Thr Ser Gly Gly Ser Ala Ala Arg Thr Thr Gln Gly Phe
1               5                   10                  15

Ala Ser Leu Phe Ser Leu Gly Ser Gln Gln Lys Ile Gln Leu Val
            20                  25                  , 30
```

(2) INFORMATION FOR SEQ ID NO:74:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

```
Ala Thr Tyr Thr Thr Gly Gly Ser Val Ala Arg Thr Thr His Gly Phe
1               5                   10                  15

Ser Ser Leu Phe Ser Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:75:

    (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids
            (B) TYPE: amino acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Val Thr Tyr Thr Thr Gly Gly Ser Gln Ala Arg His Thr Gln Ser Val
1               5               10              15

Thr Ser Phe Phe Thr Gln Gly Pro Ala Gln Arg Ile Gln Leu Ile
            20              25              30


(2) INFORMATION FOR SEQ ID NO:76:

    (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 31 amino acids
            (B) TYPE: amino acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

His Thr Tyr Thr Thr Gly Gly Thr Val Ala Arg Ser Thr Gln Gly Leu
1               5               10              15

Val Gly Phe Leu Ser Pro Gly Pro Ser Gln Asn Ile Gln Leu Ile
            20              25              30


(2) INFORMATION FOR SEQ ID NO:77:

    (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 31 amino acids
            (B) TYPE: amino acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Thr Thr Tyr Val Ser Val Gly His Ala Ser Gln Thr Thr Arg Arg Val
1               5               10              15

Ala Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val
            20              25              30

(2) INFORMATION FOR SEQ ID NO:78:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Thr Thr Thr Val Ser Gly Gly His Ala Ser Gln Ile Thr Arg Gly Val
1            5                    10                15

Thr Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val
          20                25                30


(2) INFORMATION FOR SEQ ID NO:79:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Lys Thr Ser Leu Thr Gly Val Thr Arg Ala Arg Ala Ala Ala Arg Leu
1            5                    10                15

Thr Ala Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile
          20                25                30


(2) INFORMATION FOR SEQ ID NO:80:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Gly Thr Ser Leu Thr Gly Gly Ala Arg Ala Arg Ala Ala Ser Gly Leu

```
        1                    5                         10                        15
        Ala Gly Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile
                    20                   25                        30
```

(2)  INFORMATION FOR SEQ ID NO:81:

    (i)  SEQUENCE CHARACTERISTICS:
         (A)  LENGTH: 31 amino acids
         (B)  TYPE: amino acid
         (C)  STRANDEDNESS: single
         (D)  TOPOLOGY: linear

   (ii)  MOLECULE TYPE: peptide

   (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:81:

```
Val Thr Gln Val Ser Pro Pro Gln Ala Gly Tyr Thr Thr Ser Val Leu
1                   5                    10                   15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val
            20                   25                   30
```

(2)  INFORMATION FOR SEQ ID NO:82:

    (i)  SEQUENCE CHARACTERISTICS:
         (A)  LENGTH: 31 amino acids
         (B)  TYPE: amino acid
         (C)  STRANDEDNESS: single
         (D)  TOPOLOGY: linear

   (ii)  MOLECULE TYPE: peptide

   (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:82:

```
Val Thr Gln Val Ser Gly Gly Gln Ala Gly Tyr Thr Thr Ser Val Leu
1                   5                    10                   15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val
            20                   25                   30
```

(2)  INFORMATION FOR SEQ ID NO:83:

    (i)  SEQUENCE CHARACTERISTICS:
         (A)  LENGTH: 31 amino acids
         (B)  TYPE: amino acid
         (C)  STRANDEDNESS: single
         (D)  TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Gly Thr Tyr Thr Val Gly Gly Ala Ser Ala Phe Thr Thr Ser Arg Leu
1               5                   10                  15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Arg Ile Gln Leu Val
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:84:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Asn Thr His Thr Val Gly Gly Thr Glu Gly Phe Ala Thr Gln Arg Leu
1               5                   10                  15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Lys Ile Gln Leu Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:85:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Ser Thr Arg Thr Ala Gly Gly Ala Gln Ala Phe Asn Thr Tyr Gly Val
1               5                   10                  15

Ala Ser Ile Phe Ser Pro Gly Pro Ser Gln Arg Ile Gln Leu Val
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:86:

    (i) SEQUENCE CHARACTERISTICS:

- 77 -

(A)  LENGTH: 31 amino acids
              (B)  TYPE: amino acid
              (C)  STRANDEDNESS: single
              (D)  TOPOLOGY: linear

     (ii)  MOLECULE TYPE: peptide

     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:86:

Gln Thr His Thr Val Gly Gly Ser Thr Ala His Asn Ala Arg Thr Leu
1               5               10              15

Thr Gly Met Phe Ser Leu Gly Ala Arg Gln Lys Ile Gln Leu Ile
            20              25              30


(2)  INFORMATION FOR SEQ ID NO:87:

     (i)  SEQUENCE CHARACTERISTICS:
              (A)  LENGTH: 31 amino acids
              (B)  TYPE: amino acid
              (C)  STRANDEDNESS: single
              (D)  TOPOLOGY: linear

     (ii)  MOLECULE TYPE: peptide

     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:87:

Asn Thr Arg Thr Val Ala Gly Ser Ala Ala Ala Thr Thr Arg Gly Phe
1               5               10              15

Thr Ser Met Phe Ser Ser Gly Ser Lys Gln Asn Leu Gln Leu Ile
            20              25              30


(2)  INFORMATION FOR SEQ ID NO:88:

     (i)  SEQUENCE CHARACTERISTICS:
              (A)  LENGTH: 31 amino acids
              (B)  TYPE: amino acid
              (C)  STRANDEDNESS: single
              (D)  TOPOLOGY: linear

     (ii)  MOLECULE TYPE: peptide

     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:88:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1               5               10              15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
            20              25              30

(2) INFORMATION FOR SEQ ID NO:89:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 31 amino acids
       (B) TYPE: amino acid
       (C) STRANDEDNESS: single
       (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

Glu Thr His Thr Thr Gly Ala Val Ser Gly His Thr Thr Asn Val Leu
1                   5                   10                  15

Thr Ser Leu Phe Ser Ser Gly Ser Ser Gln Asn Ile Gln Leu Ile
                20                  25                  30


(2) INFORMATION FOR SEQ ID NO:90:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 31 amino acids
       (B) TYPE: amino acid
       (C) STRANDEDNESS: single
       (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Val Thr Arg Thr Thr Gly Glu Val Ala Ala Arg Thr Ala Asn Thr Phe
1                   5                   10                  15

Ala Ser Leu Phe Thr Thr Gly Pro Ser Gln Asn Ile Gln Leu Ile
                20                  25                  30


(2) INFORMATION FOR SEQ ID NO:91:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 31 amino acids
       (B) TYPE: amino acid
       (C) STRANDEDNESS: single
       (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Thr Thr Tyr Ser Ser Gly Gln Glu Ala Gly Arg Thr Val Ala Gly Phe

```
        1                  5                      10                         15
       Ala Gly Leu Phe Thr Thr Gly Ala Lys Gln Asn Leu Tyr Leu Ile
                    20                  25                      30
```

(2) INFORMATION FOR SEQ ID NO:92:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

```
Ser Thr Ser Val Val Gly Gly Arg Gln Ala Ser Ala Thr Phe Arg Phe
1                  5                      10                     15

Thr Ser Phe Phe Ser Arg Gly Pro Thr Gln Glu Ile Lys Leu Ile
            20                  25                     30
```

(2) INFORMATION FOR SEQ ID NO:93:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

```
Asn Thr Tyr Thr Thr Ala Gly Ser Met Ala Gln Ser Ile Tyr Arg Leu
1                  5                      10                     15

Thr Asp Ile Phe Ser Thr Gly Pro Ser Gln Lys Leu Gln Leu Val
            20                  25                     30
```

(2) INFORMATION FOR SEQ ID NO:94:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Arg Thr Ile Leu Met Ala Gly Arg Gln Ala Glu Val Thr Gln Ser Phe
1               5                   10                  15

Pro Gly Leu Phe Ser Leu Ala Pro Ser Gln Lys Ile His Leu Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:95:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

Asp Thr Tyr Ala Thr Gly Gly Ser Val Ala Ser Ile Met Ala Gly Ile
1               5                   10                  15

Ala Arg Phe Phe Ser Pro Gly Ala Arg Gln Asp Ile Gln Leu Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:96:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 30 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Glu Thr Tyr Ala Thr Gly Ala Ser Ala Gly His Asp Val Ser Ser Phe
1               5                   10                  15

Ala Arg Leu Phe Ala Pro Gly Ala Arg Gln Asn Ile Gln Ile
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:97:

    (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Glu Thr His Arg Thr Gly Gly Ser Ala Ala Arg Ser Thr Ala Gly Val
1               5               10                  15


Ala Ser Leu Phe Thr Pro Gly Ala Arg Gln Asn Ile Gln Leu Ile
            20              25                  30


(2) INFORMATION FOR SEQ ID NO:98:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Asn Thr Arg Ala Val Gly Met Val Gln Ser Arg Thr Thr Tyr Ala Leu
1               5               10                  15


Thr Ser Leu Phe Asp Ser Gly Ala Ala Gln Lys Leu Gln Leu Val
            20              25                  30


(2) INFORMATION FOR SEQ ID NO:99:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

```
Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu
1               5               10              15

Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
            20              25              30
```

(2) INFORMATION FOR SEQ ID NO:100:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

```
Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Ser Val Leu Gly Ile Ala
1               5               10              15

Ser Phe Leu Thr Arg Gly Pro Lys Gln Asn Ile Gln Leu Ile
            20              25              30
```

(2) INFORMATION FOR SEQ ID NO:101:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

```
Glu Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Thr Leu
1               5               10              15

Ala Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
            20              25              30
```

(2) INFORMATION FOR SEQ ID NO:102:

    (i) SEQUENCE CHARACTERISTICS:

- 83 -

(A) LENGTH: 31 amino acids
            (B) TYPE: amino acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

Ala Thr Tyr Thr Ser Gly Gly Val Ala Ser His Thr Thr Ser Arg Phe
1               5                   10                  15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:103:

    (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 31 amino acids
            (B) TYPE: amino acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe
1               5                   10                  15

Thr Ser Phe Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
            20                  25                  30


(2) INFORMATION FOR SEQ ID NO:104:

    (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 31 amino acids
            (B) TYPE: amino acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

```
Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe
1               5               10                  15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
            20              25                  30
```

(2)  INFORMATION FOR SEQ ID NO:105:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide


    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:105:

```
Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Gly Phe
1               5               10                  15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
            20              25                  30
```

(2)  INFORMATION FOR SEQ ID NO:106:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 31 amino acids
        (B)  TYPE: amino acid
        (C)  STRANDEDNESS: single
        (D)  TOPOLOGY: linear

    (ii)  MOLECULE TYPE: peptide


    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:106:

```
Glu Thr Tyr Thr Ser Gly Arg Val Ala Gly His Thr Thr Ser Gly Phe
1               5               10                  15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
            20              25                  30
```

(2)  INFORMATION FOR SEQ ID NO:107:

    (i)  SEQUENCE CHARACTERISTICS:

(A)  LENGTH: 31 amino acids
            (B)  TYPE: amino acid
            (C)  STRANDEDNESS: single
            (D)  TOPOLOGY: linear

        (ii)  MOLECULE TYPE: peptide


        (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:107:

    Ala Thr Tyr Thr Ser Gly Gly Val Ala Gly Arg Thr Thr Ser Gly
    1               5                   10                  15

    Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
                20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:108:

        (i)  SEQUENCE CHARACTERISTICS:
            (A)  LENGTH: 31 amino acids
            (B)  TYPE: amino acid
            (C)  STRANDEDNESS: single
            (D)  TOPOLOGY: linear

        (ii)  MOLECULE TYPE: peptide


        (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:108:

    Glu Thr His Thr Thr Gly Arg Val Ala Gly His Thr Thr Ser Arg Phe
    1               5                   10                  15

    Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
                20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:109:

        (i)  SEQUENCE CHARACTERISTICS:
            (A)  LENGTH: 31 amino acids
            (B)  TYPE: amino acid
            (C)  STRANDEDNESS: single
            (D)  TOPOLOGY: linear

        (ii)  MOLECULE TYPE: peptide


        (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:109:

                            - 86 -

```
Glu Thr His Thr Thr Gly Arg Val Val Gly His Thr Thr Ser Gly
1                   5                   10                  15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:110:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

```
Glu Thr His Thr Thr Gly Arg Val Ala Gly Arg Thr Thr Ser Gly Phe
1                   5                   10                  15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:111:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

```
Thr Thr Tyr Thr Ser Gly Gly Val Ala Gly Arg Thr Thr Ser Gly
1                   5                   10                  15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:112:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids

(B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

     (ii)  MOLECULE TYPE: peptide


     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:112:

     Lys Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Arg
                      5                   10                  15

     Phe Thr Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
                     20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:113:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

     (ii)  MOLECULE TYPE: peptide


     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:113:

     Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
     1               5                   10                  15

     Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val
                     20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:114:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

     (ii)  MOLECULE TYPE: peptide


     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:114:

```
Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val Gln Gly Phe
1               5                   10                  15

Ala Ser Leu Phe Arg Leu Gly Ala Ser Gln Glu Ile Gln Leu Val
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:115:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

```
Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1               5                   10                  15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Asn Gln Leu Val
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:116:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

```
Ser Thr Arg Val Thr Gly Gly Gln Gln Gly His Ala Ala His Ser Leu
1               5                   10                  15

Thr Ser Leu Phe Arg Leu Gly Ala Ser Gln Asn Ile Gln Leu Val
            20                  25                  30
```

(2) INFORMATION FOR SEQ ID NO:117:

    (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids
            (B) TYPE: amino acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:117:

Asn Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu
1               5               10              15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Gln Asn Ile Gln Leu Val
            20              25              30


(2) INFORMATION FOR SEQ ID NO:118:

    (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 31 amino acids
            (B) TYPE: amino acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:

Gly Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu
1               5               10              15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Glu Asn Ile Arg Leu Val
            20              25              30


(2) INFORMATION FOR SEQ ID NO:119:

    (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 31 amino acids
            (B) TYPE: amino acid
            (C) STRANDEDNESS: single
            (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:119:

```
Ser Thr Arg Val Ser Gly Gly Gln Gln Gly Arg Ala Ala His Ser Leu
1               5               10              15

Thr Ser Leu Phe Thr Leu Gly Ala Ser Gln Asn Ile Gln Leu Val
            20              25              30
```

(2) INFORMATION FOR SEQ ID NO:120:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide


   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

```
Ser Thr His Val Thr Gly Ala Leu Gln Gly Arg Ala Ala Tyr Gly Ile
1               5               10              15

Thr Ser Phe Leu Ser His Gly Pro Ser Gln Lys Ile Gln Leu Val
            20              25              30
```

(2) INFORMATION FOR SEQ ID NO:121:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

   (ii) MOLECULE TYPE: peptide


   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

```
Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu
1               5               10              15

Ala Ser Leu Leu Ser Pro Gly Ala Asn Gln Lys Ile Gln Leu Val
            20              25              30
```

(2) INFORMATION FOR SEQ ID NO:122:

    (i) SEQUENCE CHARACTERISTICS:

- 91 -

```
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

     (ii) MOLECULE TYPE: peptide


     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

     Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu
     1               5                   10                  15

     Ala Ser Leu Leu Gly Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
                 20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:123:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

     (ii) MOLECULE TYPE: peptide


     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

     Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu
     1               5                   10                  15

     Ala Ser Leu Leu Ser Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
                 20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:124:

     (i)  SEQUENCE CHARACTERISTICS:
          (A)  LENGTH: 31 amino acids
          (B)  TYPE: amino acid
          (C)  STRANDEDNESS: single
          (D)  TOPOLOGY: linear

     (ii) MOLECULE TYPE: peptide


     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:
```

```
Arg Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1               5               10              15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
        20              25              30
```

(2) INFORMATION FOR SEQ ID NO:125:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:125:

```
Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1               5               10              15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
        20              25              30
```

(2) INFORMATION FOR SEQ ID NO:126:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:126:

```
Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1               5               10              15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asp Ile Gln Leu Ile
        20              25              30
```

(2) INFORMATION FOR SEQ ID NO:127:

    (i) SEQUENCE CHARACTERISTICS:

```
            (A)  LENGTH: 31 amino acids
            (B)  TYPE: amino acid
            (C)  STRANDEDNESS: single
            (D)  TOPOLOGY: linear

     (ii)  MOLECULE TYPE: peptide



     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:127:

     Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
     1               5                   10                  15

     Thr Ser Leu Leu Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
                 20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:128:

     (i)  SEQUENCE CHARACTERISTICS:
            (A)  LENGTH: 31 amino acids
            (B)  TYPE: amino acid
            (C)  STRANDEDNESS: single
            (D)  TOPOLOGY: linear

     (ii)  MOLECULE TYPE: peptide



     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:128:

     Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Leu
     1               5                   10                  15

     Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
                 20                  25                  30



(2)  INFORMATION FOR SEQ ID NO:129:

     (i)  SEQUENCE CHARACTERISTICS:
            (A)  LENGTH: 31 amino acids
            (B)  TYPE: amino acid
            (C)  STRANDEDNESS: single
            (D)  TOPOLOGY: linear

     (ii)  MOLECULE TYPE: peptide
```

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:129:

Gln Thr Arg Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
1               5                   10                  15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Arg Asn Ile Gln Leu Ile
        20                  25                  30


(2) INFORMATION FOR SEQ ID NO:130:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:130:

Gln Thr His Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
1               5                   10                  15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
        20                  25                  30


(2) INFORMATION FOR SEQ ID NO:131:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 31 amino acids
        (B) TYPE: amino acid
        (C) STRANDEDNESS: single
        (D) TOPOLOGY: linear

    (ii) MOLECULE TYPE: peptide


    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:131:

Gln Thr His Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
1               5                   10                  15

Thr Asn Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
        20                  25                  30


(2) INFORMATION FOR SEQ ID NO:132:

(i)  SEQUENCE CHARACTERISTICS:
             (A)  LENGTH: 24 amino acids
             (B)  TYPE: amino acid
             (C)  STRANDEDNESS: single
             (D)  TOPOLOGY: linear

       (ii)  MOLECULE TYPE: peptide


       (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:132:

       Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly Phe
       1               5                   10                  15

       Val Ser Leu Leu Ala Pro Gly Ala
                   20


(2)  INFORMATION FOR SEQ ID NO:133:

        (i)  SEQUENCE CHARACTERISTICS:
             (A)  LENGTH: 31 amino acids
             (B)  TYPE: amino acid
             (C)  STRANDEDNESS: single
             (D)  TOPOLOGY: linear

       (ii)  MOLECULE TYPE: peptide

       (ix)  FEATURE:
             (A)  NAME/KEY: Xaa
             (B)  LOCATION: 1
             (D)  OTHER INFORMATION: /label=Ahe
                  /note=2-amino heptanoic is butyl alanine


       (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:133:

       Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly
       1               5                   10                  15

       Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu
                   20                  25                  30


(2)  INFORMATION FOR SEQ ID NO:134:

        (i)  SEQUENCE CHARACTERISTICS:
             (A)  LENGTH: 6 amino acids
             (B)  TYPE: amino acid
             (C)  STRANDEDNESS: single
             (D)  TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide


(xi) SEQUENCE DESCRIPTION: SEQ ID NO:134:

Ser Leu Phe Xaa Xaa Gly
1               5